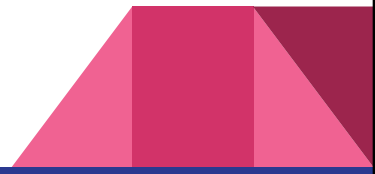




# Random Numbers

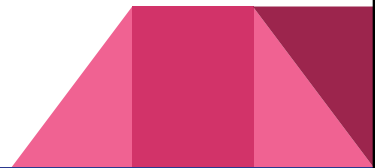
Not Really Random

## Pseudorandom

- We call the “random” numbers we generate in computer programs pseudorandom since they are not truly random.
  - the C function `rand()` returns a pseudorandom number between 0 and `RAND_MAX`.
    - (usually 32767)
  - `#include <stdlib.h>`
- 

# Scaling

- We can scale the range of number down from 32767 to what we want using the % operator.
- To get a number between 1 and 6 for a dice roll we use
  - `die = rand() % 6 + 1`
- Why?



# Seeding

- If we kept running our program we would get the same set of “random” numbers.
- We need to **seed** the generator with a new number.
- Call **srand**(time(0)) to get a seed based on the time.
- `#include <time.h>`

